

#### Ackoff Collaboratory

for Advancement of the Systems Approach

# **Early Warning with Minimal Trend Data**



#### **Qualifications and Capabilities**

- •Extensive experience in tools for rapid modeling, simulation and analysis of societies and political conflicts world wide.
- •Over 10 years of R&D on the toolset to model states, substates and sets of states our platform (StateSim) models factions, factional leadership decisionmaking, follower mobilization/defection, institutional influence, and expected and unexpected (emergent) effects of action plans.
- •StateSim was funded by AFOSR and an intel agency, and later sponsored by DARPA for a 100s of validity assessments in a challenge grant. The platform was used to derive simulation by country experts and produced forecasts (accuracy ~80%) for events of interest.
- •StateSim has also been embedded in apps for an Intel Agency, the US Army, USAID, and Pentagon.
- •In the past 2 years, the Pentagon has funded us to take 100s of past analysis components (agents, factional groups, public institutions, insurgents, etc) and to prototype a Rapid Generator. This Generator reuses, adapts, and tailors 100s of past situation analyses to rapidly model new communities and ethno-political situations as they unfold around the world.

#### Research areas of interest

- •Make predictions in the absence of trendlines, based only on current situational state and factors.
- •Use of a knowledge base of analogous past scenarios and case based reasoning to speed model creation with minimal new information.
- •Guidance of SIGINT extraction partners as to the minimal information (shallow features) that will permit rich analogic models to be automatically constructed.
- •Automatic explanation of what is driving crisis situations, and how alternative courses of action might succeed or fail.
- •NOTE: StateSim was **Winner**, 2011 GameTech/Federal Virtual World Challenge

1<sup>st</sup> Place, Al for Pattern of Life

**Auto-Extract Tools** Common Conflict Picture (Sintelix, Profiler+,...) (CCP) Generic Models **Documents** Repository Web & DBs The Generator Pull Phase Identify major instabilities elect conflict graph position Replace group labels Pulls le up/down resources Shift alliance/coalition strengths Adapt central issue terms Fill out any remaining parameters Build Model, Specify Actions & Run/Analyze Experiments

## Answers

### Seeking Research Groups with background in:

- Data Mining (Factions, Resources, Force Buildup, ...)
- Automatic Extraction (Situation Assessment)
- Social Media / Web Scraping (Sentiment, Influence, ..)

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